Negative Knowledge and Rational Creativity

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Rationality cannot be restricted to the following of logical rules. Such a restriction encounters foundational problems - for example, What is the rational warrant for those rules? And it also encounters the following conundrum: No logic can construct a more powerful logic than itself. Therefore, if rationality is equivalent to honoring the rules of logic, the history of logic (and mathematics), which consists, among other things, of the construction of more and more powerful logics, is arational.

I propose that the core of thought is not rationality, opposed by the creative passions. Instead, thought is fundamentally an internal variation and selection process, an evolutionary epistemology, involving creativity at its core. But a crucial aspect of the development of this process is the learning of selection criteria, of what constitutes error. Of course, such negative knowledge of error can itself be in error, so criteria of potential error form a hierarchy, with some criteria applying to constructions concerning interactions with the world, and other criteria applying to lower level criteria. Because such criteria, when expressed in words, form the grounds for criticism, I call them *critical principles*.

The positive knowledge that is generally identified as rational is the knowledge of how to avoid error. Rationality, then, is a natural developmental tendency of this variation and selection creative process. One very general, and therefore important, kind of rationality focuses on relations among extensions of representations, independent of the specific natures of the elements in those extensions. For example, if the extension of A is included in the extension of B, then All As are Bs. This view yields a reconstruction of logic along the lines of Tarski, Mostowski, and Sher, and, thus, a recovery of logic as an aspect of rationality, though not its center, and rationality an aspect of creative variation and selection processes. Rationality and creativity, therefore, constitute aspects of an integrated developmental tendency, not opposing forces. The key to this integration is the negative knowledge of critical principles.